

SECTION 095100 - ACOUSTICAL CEILING PANELS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Work in this Section includes all labor, materials, equipment and services necessary to complete the Sound Absorptive Plaster System, as shown on the drawings, finish schedules, and / or defined and specified herein.

1.2 RELATED SECTIONS

- A. Gypsum Board – See Section 092900

1.3 QUALITY ASSURANCE

A. Certified Installers:

- 1. All Contractors shall be certified to install the Sound Absorbing Plaster System by the manufacturer

1.4 SUBMITTALS

A. Shop Drawings / Product Data:

- 1. Base Drawings, Approved Detail Drawings and Product Literature.
- 2. Show dimensioned ceiling plans with control joint locations, mounting details, transition details to adjacent work, design, weight, thickness, color and other data necessary to install the work and coordinate work with other affected trades.

A. Samples / Mock-Up:

- 1. Provide two 8-1/2" x 11" samples of the Sound Absorbing Plaster System in color as noted in Section 2.1 below. Samples must show the randomly spun mineral wool backing.

B. Acoustical Performance Data:

- 1. Certified Acoustical Performance Sound Absorption Test Report data, conducted by a recognized, independent, testing agency, shall be submitted upon request and meet the following minimum requirements. Sound absorption reports shall not be more than 3 years old. Noise Reduction Coefficient (NRC) for the 1 - 3/16" (30mm) system shall be 0.80 per ASTM C 423-09a *Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method for 'Type A' Mounting*. Specific performance of the 1 - 3/16" sound absorptive system shall be as follows:

| Frequency, Hz | Absorption Coefficient |
|---------------|------------------------|
| 100 | 0.03 |
| 125 | 0.08 |
| 200 | 0.25 |
| 250 | 0.45 |
| 400 | 0.75 |



SECTION 095100 - ACOUSTICAL CEILING PANELS

| | |
|------|------|
| 500 | 0.90 |
| 800 | 1.05 |
| 1000 | 1.01 |
| 1250 | 0.99 |
| 1600 | 0.95 |
| 2000 | 0.86 |
| 2500 | 0.83 |
| 4000 | 0.76 |
| 5000 | 0.74 |

C. Fire Test Data:

1. Certified Reports on Surface Burning Characteristics Determined by ASTM E 84 *Twenty-Five Foot Tunnel Furnace Test Method*, conducted by a recognized, independent, testing agency, shall be submitted upon request and meet the following minimum requirements:
 - a. Class A Flame Spread Classification
 1. 25 Flame Spread or less
 2. 10 Smoke Development or less

D. Mold Test Data

1. Certified Reports from an independent, testing agency, shall be submitted upon request and meet the following minimum requirements:
 - a. Testing per ASTM 3273
 1. 10 / 10 – Week 4 – No Defacement
 - b. Testing per ASTM G – 21 F, attaining a rating of 0.

E. Light Reflectance Coefficient Test Data:

1. Certified Reports on Light Reflectance Coefficient Performance Determined by ASTM E 1477-98 *Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating Sphere Reflectometer*, conducted by a recognized, independent, testing agency, shall be submitted upon request and meet the following minimum requirements:
 - a. Light Reflectance Value
 1. Light Reflectance Value 'L' a minimum of 0.79.

F. VOC Emission Test Data:

1. Test Certificate from an independent testing certificate for California Department of Public Health CDPH / EHLB / Standard Method Version 1.1, 2010
 - a. School Classroom - Compliant
 - b. Private Office – Compliant

G. R-Value:

1. R-Value – 6.83 or greater

SECTION 095100 - ACOUSTICAL CEILING PANELS

1.5 REFERENCES

- A. ASTM C 423-09a: Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method 'Type A' Mounting.
- B. ASTM E 795-05: Standard Practices for Mounting Test Specimens During Sound Absorption Tests.
- C. ASTM E 84: Standard Test Method for Surface Burning Characteristics and Building Materials. Class A Fire Rating.
- D. ASTM C842, Specification and Standards for Application of Interior Gypsum Plaster.
- E. ASTM E 1477-98 Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating Sphere Reflectometer.
- F. VOC Test - California Department of Public Health CDPH / EHLB / Standard Method Version 1.1, 2010
- G. ASTM 3273, ASTM G – 21 B, and ASTM G – 21 F Mold Resistance and Fungal Resistance Test

1.6 DELIVERY, STORAGE AND HANDLING

- A. Ship and deliver in protective packaging to prevent freight damage.
- B. Allow materials to become acclimated to Project conditions before installation.
- C. Store materials in accordance with manufacturer's recommendations in a fully enclosed space where materials will be protected against damage from moisture, surface contamination and other causes. All wet work must be completed in area of storage.
- D. Protect materials from freezing. Product that has frozen cannot be used and is not warranted.

1.9 PROJECT CONDITIONS

- A. Environmental Requirements: Comply with requirements of referenced plaster application standards and recommendations of product manufacturer for environmental conditions before, during and after installation.
- B. Temperature Requirements: Where ambient outdoor temperature at the building site is less than 55° F (13° C), a temperature of not less than 55° F and not more than 80° F shall be maintained continuously in the area of the installation for a period of not less than one week prior to the application of Sound Absorbing Plaster System. Temporary heat shall be evenly distributed to prevent concentrated uneven heat or cold on the Sound Absorbing Plaster System or its substrate. Acceptable temperature range shall be maintained until the permanent HVAC system is activated.

SECTION 095100 - ACOUSTICAL CEILING PANELS

- C. Ventilation: Ventilate building spaces as required to remove excess moisture to promote drying of the applied materials.
- D. Protect contiguous work from soiling, splattering, moisture deterioration and other harmful effects that may be caused by the application of the materials.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Basis of Design System: BASWaphon Sound Absorbing Plaster System's performance, specifications, information, and details as supplied by BASWA acoustic North America, LLC, 3900 Ben Hur Ave., Suite 10, Willoughby, Ohio 44094, www.baswaphon.com, (440.951.6022). Other products and installers must meet the design and performance criteria described herein.
- B. System Thickness: Total system thickness (adhesive, Pre-Coated mineral wool panels, Base Coat and Base finish coat) of approximately 1 - 3/16" (30mm).
- C. Components: Pre-Coated mineral wool supporting panels, panel adhesive, acoustic plaster Fill, a base coat of acoustic plaster Base and a finish coat of acoustic plaster Base.
- D. Trim Pieces:
 - 1. All corner beads, reveals, terminations, control joints or other trim pieces shall be white vinyl, manufactured by Trim-Tex or Vinyl Corp. in profiles approved by manufacturer. Trims shall be installed with Trim-Tex 847 Spray Adhesive; no other adhesive is approved.
- E. The Base coats shall be integrally colored by the addition of pigments provided by manufacturer. Color shall be selected by the Architect or as noted in the Finish Schedule.
- F. Surface Protection:
 - 1. A spray application of Surface Protection, supplied by manufacturer shall be applied to the finished surface after system has completely dried for a minimum of 72 hours. The non-bridging granulate coating resists stains and improves cleanability without negatively affecting acoustical absorption. Application and coverage shall be per manufacturer's approved application guidelines.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine areas where, and conditions under which, the Sound Absorbing Plaster System is to be installed. Correct any conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected in order to permit the proper installation of the work.

SECTION 095100 - ACOUSTICAL CEILING PANELS

- B. Verify that all mechanical and electrical services within the area of application have been roughed in at the appropriate depth relative to the thickness of the system; tested and approved, prior to commencement of application. Review approved details provided by manufacturer for verification.

3.2 ACCEPTABLE SUBSTRATE

A. General:

1. The Sound Absorbing Plaster Systems must be installed over a “sealed air tight” stable substrate. All penetrations shall be “closed off” to prevent air from passing through the Sound Absorbing Plaster System, thereafter through the substrate and then into the plenum above, or vice versa.
2. All HVAC, electrical, fire sprinkler and other penetrations of the substrate shall be sealed with traditional drywall tape or a self-adhesive fire tape to prevent air movement between the plenum and finished space or vice versa.
3. Adhesive Strength required for bonding to the substrate surface for the application of the Sound Absorbing Plaster System is a minimum of 17 N/psf.
4. Plywood substrates are not acceptable due to the potential of excessive expansion and contraction movement.
5. All substrates for the application shall not vary from plumb, level, or a “smooth consistent curvature” by more than a total of 1/4 inch in 12 feet.

B. Substrate Material:

1. New drywall substrates receiving the full Sound Absorbing Plaster System shall be a Level One finish; taped only.

3.3 INSTALLATION

A. General Information and Requirements:

1. Hand Tools:

- a. All application of Pre-Coated mineral wool panels, Fill, and Base coats must be facilitated by using the proper stainless steel flat or notched hand trowels supplied by manufacturer. The proper notched gauging trowels and smoothing trowels shall be used at each step noted below in order to control material thickness.

2. Pump (Optional):

- a. The Base coats may be applied by using traditional hawk and trowel methods; however, use of a pump dramatically increases production and greatly reduces product waste. The proper notched gauging trowels and



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SECTION 095100 – ACOUSTICAL CEILING PANELS

SECTION 095100 - ACOUSTICAL CEILING PANELS

smoothing trowels shall be used at each step noted below in order to control material thickness. Pump is to be supplied by manufacturer.

3. Lighting:

- a. Inherent in all hand troweled product applications, minor acceptable trowel marks or imperfections in the finished surface may occur and become exposed or "exaggerated" under critical lighting. Ensure that the lighting used during the entire installation process replicates the actual finished lighting. All skylights, clearstory windows and other openings which naturally light the area of the installation shall be uncovered during the entire installation in order to represent finished conditions.

4. Drying Times:

- a. Drying times for the panel adhesive, Fill, and Base coats are typically overnight, however, drying times may be longer due to unusual on-site conditions. Prior to proceeding with any additional work, ensure panel adhesive, Fill, and Base is completely and thoroughly dry.

5. Finished Coat Installation:

- a. Application of the Base finish coat shall be facilitated in one operation at each area of installation; "cold joints" in the finish coat are not acceptable.

6. Staging:

- a. Generally, the Sound Absorbing Plaster System is installed using full "tiered scaffolding with outriggers" on wall applications and / or a full "dance floor scaffolding" on ceiling applications in order to achieve an acceptable finish without 'cold joints". Rolling tower scaffolds which can be moved across an installation area may also be acceptable.

7. Access Doors in Sound Absorbing Plaster System:

- a. Access Doors used in the Sound Absorbing Plaster System shall be "trimless" and have a 1" recessed door. Access Door shall be model number 5020, sized as required, manufactured by Acudor Products, Inc. (800.722.0501). Install per detail approved by Sound Absorbing Plaster System manufacturer.

8. Securing to Sound Absorbing Plaster System:

- a. Light fixtures, ornamentation, speakers, cover plates or any other items cannot be attached to the Sound Absorbing Plaster System. Ensure items are secured to proper blocking or other attachment system independent of the Sound Absorbing Plaster System per details approved by manufacturer.

B. Installation Procedures:



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SECTION 095100 – ACOUSTICAL CEILING PANELS

SECTION 095100 - ACOUSTICAL CEILING PANELS

1. Install Sound Absorbing Plaster System materials in accordance with manufacturer's installation instructions and details. Installation shall start only after all other work in the area of the installation has been completed.
 - a. Pre-Coated Mineral Wool Panels:
 1. A field applied 2mm thick layer of adhesive is applied to the mineral wool back face of the 26mm thick Pre-Coated panel. Panel is pressed firmly onto and fully adhered to the stable substrate. Ensure that panels are set as level and as smooth to each other as practicable. Stagger joints between panels.
 - b. Trim:
 1. Install white vinyl trim pieces. Trims shall be installed with Trim-Tex 847 Spray Adhesive; no other adhesive is approved.
 - c. Fill:
 1. Fill seams between Pre-Coated panels with acoustic plaster Fill, and cover all white vinyl trim with acoustic plaster Fill. Sand Fill smooth when completely dry.
 - d. Base (Color):
 1. If color is specified, prior to applying the layer of acoustic plaster Base, add one vial of pigment per pail. Ensure product is thoroughly mixed and all pails for each separate area are batched together in order to provide even consistent coloring. Apply a 2.0 – 3.0mm thick layer and trowel smooth. Sand smooth when completely dry.
 - e. Base Finish Coat (Color):
 1. If color is specified, prior to applying the finish layer of acoustic plaster Base coat, add one vial of pigment per pail. Ensure product is thoroughly mixed and all pails for each separate area are batched together in order to provide even consistent coloring. Apply a 0.5 – 1.0mm thick layer of acoustic plaster Base coat and trowel smooth to a quality level consistent with accepted samples or mock-up. Note that Sound Absorbing Plaster System is a hand troweled finished product. Inherent in all hand troweled product applications, minor acceptable trowel marks and other imperfections in the finished surface may occur which are only visible at certain times of day or under certain critical lighting conditions. The finish should be critically viewed only under end-use lighting conditions.

END OF SECTION 095100